What is claimed is:

1. A system for detecting ethylene oxide in air comprising:

a light source emitting light at a wavelength of approximately 2.2 microns, wherein said light source is positioned to emit light through a sample of air;

a detector configured to detect the intensity of light emitted from said light source; and

an electronics unit coupled to said detector for determining the level of ethylene oxide in the sample of air.

2. The system of claim 1, wherein said light source is chosen from the group comprising: a tunable diode laser, a color center laser, a quantum cascade laser, and a VCSEL.

3. The system of claim 1, wherein said detector is an InGaAs detector.

4. The system of claim 1, wherein said light source emits light at a wavelength of approximately 2.22 microns.

5. The system of claim 1, wherein said light source emits light at a wavelength of approximately 2.216 microns.

6. The system of claim 1, wherein said light source emits light at a wavelength of approximately 2.195 microns.

7. A system for detecting ethylene oxide in air comprising:

a light source emitting light a wavelength of approximately 1.6 microns, wherein said light source is positioned to emit light through a sample of air;

a detector configured to detect the intensity of light emitted from said light source; and

an electronics unit coupled to said detector for determining the level of ethylene oxide in the sample of air.

8. The system of claim 7, wherein said light source is chosen from the group comprising: a tunable diode laser, a color center laser, a quantum cascade laser, and a VCSEL.

9. The system of claim 7, wherein said detector is an InGaAs detector.

10. The system of claim 7, wherein said light source emits light at a wavelength of approximately 1.69 microns.

11. The system of claim 7, wherein said light source emits light at a wavelength in the range of approximately 1.64 – 1.65 microns.

12. A method for determining the level of ethylene oxide in a sample of gas comprising the following steps:

providing a light source emitting light at a wavelength chosen from the group comprising 1.6 μm, 1.645 μm ,1.692 μm, 2.195 μm, 2.2 μm, and 2.216 μm;

positioning a detector opposite the light source to detect the level of emitted light;

supplying a sample of gas between the light source and the detector; and

detecting the amount of light passing through the sample of gas.

13. A system for detecting ethylene oxide in air comprising:

a light source emitting light at a wavelength where ethylene oxide molecules absorb light at a substantially greater level than other molecules within air, wherein said light source is positioned to emit light through a sample of air;

a detector configured to detect the intensity of light emitted from said light source; and

an electronics unit coupled to said detector for determining the level of ethylene oxide in the sample of air.

14. The system of claim 13, further comprising:

a plurality of sample areas, each sample area containing air that may contain ethylene oxide; and

a sample area selector, for selectively delivering air from said plurality of sample areas to pass between said light source and said detector.

15. A method for determining the level of ethylene oxide in air, wherein the improvement comprises, using absorption spectroscopy in the wavelength range of approximately 2.2 μm.

16. A method for determining the level of ethylene oxide in air, wherein the improvement comprises, using absorption spectroscopy in the wavelength range of approximately 1.6 μm.

17. A system for detecting ethylene oxide in a sample of gas comprising:

a Herriott cell having two opposing mirrors;

a light source emitting light through said Herriott cell and configured to reflect off the mirrors to pass through the gas at least two times;

a detector configured to detect the intensity of light emitted from said light source after the light reflects off the mirrors at least two times; and

electronics coupled to said detector for determining the level of ethylene oxide in the gas; and

wherein said light source emits light approximately at a wavelength chosen from the group comprising: 1.6 μm, 1.645 μm ,1.692 μm, 2.195 μm, 2.2 μm, and 2.216 μm.